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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/799,018	03/12/2004	Jon Bengston	2156-613A	7537

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EXAMINER
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CLEVELAND, MICHAEL B

ART UNIT	PAPER NUMBER
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1762

DATE MAILED: 11/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/799,018

Applicant(s)

BENGSTON, JON

Examiner

Michael Cleveland

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 12 March 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 13-27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 031204.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-12, drawn to an electroless plating method, classified in class 427, subclass 304.
  - II. Claims 13-16, 21-24, drawn to an etching solution, classified in class 106, subclass 1.11.
  - III. Claims 17-20, drawn to an activating solution, classified in class 106, subclass 1.11.
  - IV. Claims 25-27, drawn to a dry activating composition, classified in class 106, subclass 1.11.
2. The inventions are distinct, each from the other because of the following reasons:
3. Inventions II and I are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the product as claimed can be used in a materially different process of using the product such as etching and coating a conductive substrate.
4. Inventions (III or IV) and I are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the product as claimed can be used in a materially different process of using the product such as activating and coating a conductive substrate.
5. Inventions II and (III or IV) are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions have different modes of operation, different functions, and different effects because the invention of Group II is a composition for etching a surface, and the inventions of Group III and IV are compositions for activating a surface prior to electroless coating. The

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inventions of Group II and Groups III or IV contain no common components and are described as used in distinct steps of the process of Group I.

6. Inventions III and IV are related as mutually exclusive species in an intermediate-final product relationship. Distinctness is proven for claims in this relationship if the intermediate product is useful to make other than the final product (MPEP § 806.04(b), 3rd paragraph), and the species are patentably distinct (MPEP § 806.04(h)). In the instant case, the intermediate product is deemed to be useful as an abrasive and the inventions are deemed patentably distinct since there is nothing on this record to show them to be obvious variants. Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions anticipated by the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

7. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

8. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

9. During a telephone conversation with John Cordani on 11/18/2005 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-12. Affirmation of this election must be made by applicant in replying to this Office action. Claims 13-27 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

### ***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1-9 and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doty et al. (U.S. Patent 3,647,699, hereafter '699) and Gedrat et al. (U.S. Patent 4,285,991) hereafter '991) in view of each other.

'699 teaches a method of plating a non-conductive substrate comprising the steps of:

- a) etching the surface of the non-conductive substrate with an etching solution, said etching solution comprising potassium permanganate and phosphoric acid (col. 2, lines 55-57);
- b) activating the etched surface of the non-conductive substrate with a palladium salt (col. 2, lines 60-63); and
- d) electrolessly plating the etched and activated surface (col. 2, lines 63-67).

'699 does not teach activating the substrate by treating with an activating solution that comprises an amine complexor with the palladium salt nor subsequently reducing the palladium with a reducing agent.

However, '991 teaches a method of plating a non-conductive substrate comprising the steps of:

- a) etching the surface of the non-conductive substrate with an etching solution (col. 5, lines 11-15);
- b) activating the etched surface of the non-conductive substrate with an activating solution comprising palladium sulfate and 2-aminopyridine (col. 5, lines 15-20);
- c) contacting the etched and activated surface of the non-conductive substrate with a reducing agent for the palladium (col. 5, lines 15-20); and
- d) electrolessly plating the etched and activated surface (col. 5, lines 21-30).

'991 does not teach that the etching solution contains potassium permanganate and a mineral acid.

Taking the references as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the particular etching solution of '699 as the etching solution of '991 with a reasonable expectation of success and with the expectation of similar results because '699 teaches that its solution is suitable for etching plastic substrates for subsequent electroless plating. Likewise, it would have been obvious to one of ordinary skill in

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the art at the time the invention was made to have used the activating treatment steps of '991 as the particular activating treatment of '699 with a reasonable expectation of success and with the expectation of similar results because '991 teaches that its treatment is suitable to activate etched resin substrates for electroless plating. The selection of something based on its known suitability for its intended use has been held to support a *prima facie* case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945).

Claim 3: The concentrations of '699 (50-80 vol. % of phosphoric acid and 5 g/l to saturation (which the disclosure teaches is 70 g/l) of potassium permanganate (col. 24-27) are very similar to those of the disclosed preferred composition on p. 10 (45 vol. % phosphoric acid and 50g/l of potassium permanganate. Therefore, it reasonably appears that these solution fall within the preferred pH range of 1-3.

Claim 9: '699 does not teach intermediate treatment between etching and activation, and therefore does not suggest the removal of manganese oxide between the steps.

Claims 11-12: '991 teaches that the plating may be via nickel plating solutions that do not contain ammonia (Examples 1-3).

12. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Doty '699 and Gedrat '991 in view of each other as applied to claim 1 and further in view of Goffredo et al. (U.S. Patent 4,576,685, hereafter '685).


'699 and '991 are discussed above but do not teach that the reducing agent is sodium borohydride in a caustic solution. However, '991 is open to the use of other reducing agents. '685 teaches that sodium borohydride in a pH 12 solution is effective for reducing palladium prior to subsequent electroless plating (col. 5, lines 3-14). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used sodium borohydride in a caustic solution as the particular reducing agent of '699 and '991 with a reasonable expectation of success because '685 teaches that it is a suitable reducing agent for reducing palladium prior to subsequent electroless plating.

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13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Cleveland whose telephone number is (571) 272-1418. The examiner can normally be reached on Monday-Thursday, 7-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Michael Cleveland  
Primary Examiner  
Art Unit 1762

11/25/2005